

WHAT IS CLAIMED IS:

1. A fertility impairing vaccine comprising at least one component selected from the group consisting of (a) a polypeptide comprising an avian zona pellucida protein or an immunogenic fragment thereof and (b) a polynucleotide comprising a nucleotide sequence encoding a polypeptide comprising an avian zona pellucida protein or an immunogenic fragment thereof.
2. The fertility impairing vaccine of claim 1 wherein the avian zona pellucida protein is a glycoprotein.
3. The fertility impairing vaccine of claim 1 wherein the avian zona pellucida protein is a naturally occurring protein.
4. The fertility impairing vaccine of claim 1 wherein the avian zona pellucida protein is a recombinant protein.
5. The fertility impairing vaccine of claim 1 wherein the avian zona pellucida protein is a chemically or enzymatically synthesized protein.
6. The fertility impairing vaccine of claim 1 further comprising an immunological adjuvant.
7. The fertility impairing vaccine of claim 6 wherein the immunological adjuvant comprises synthetic trehalose dicorynomycolate.
8. The fertility impairing vaccine of claim 1 further comprising squalene oil.
9. The fertility impairing vaccine of claim 1 wherein the polypeptide further comprises at least one epitope selected from the group consisting of a T cell epitope, a helper T cell epitope and a B cell epitope.

10. The fertility impairing vaccine of claim 1 which is an immunosterilant vaccine.
11. The fertility impairing vaccine of claim 1 which is an immunocontraceptive vaccine.
12. The fertility impairing vaccine of claim 1 wherein the polynucleotide comprises a vector.
13. The fertility impairing vaccine of claim 12 wherein the vector is a plasmid.
14. The fertility impairing vaccine of claim 12 wherein the vector is a viral vector.
15. The fertility impairing vaccine of claim 1 wherein the polynucleotide further comprises a regulatory sequence operably linked to the nucleotide sequence encoding the polypeptide comprising the avian zona pellucida protein or immunogenic fragment thereof.
16. The fertility impairing vaccine of claim 1 wherein the polynucleotide further comprises an immunostimulatory sequence.
17. A method for impairing the fertility of an animal comprising administering to the animal a fertility impairing vaccine of any of the preceding claims wherein the vaccine is administered in a manner and an amount effective to cause fertility impairment in the animal.
18. The method of claim 17 wherein the vaccine causes temporary, reversible infertility in the animal.
19. The method of claim 17 wherein the vaccine causes permanent, irreversible infertility in the animal.

20. The method of claim 17 wherein the animal is a mammal.
21. The method of claim 20 wherein the mammal is selected from the group consisting of a horse, a deer, an elephant, a rat, a mouse, a rabbit, a ferret, a dog and a cat.
22. The method of claim 21 wherein the animal is a dog.
23. The method of claim 21 wherein the animal is a cat.
24. The method of claim 17 wherein the animal is a bird.
25. The method of claims 17-24 wherein the fertility impairing vaccine further comprises at least one component selected from the group consisting of (a) a polypeptide comprising a porcine zona pellucida protein or an immunogenic fragment thereof and (b) a polynucleotide comprising a nucleotide sequence encoding a polypeptide comprising a porcine zona pellucida protein or an immunogenic fragment thereof.
26. The method of claim 25 wherein the fertility impairing vaccine is a polypeptide vaccine, and wherein the ratio (aZP:pZP) of avian zona pellucida protein (aZP) to porcine zona pellucida protein (pZP) is about 100:1 to about 1:100.
27. The fertility impairing vaccine of claims 1-16 further comprising at least one component selected from the group consisting of (a) a polypeptide comprising a porcine zona pellucida protein or an immunogenic fragment thereof and (b) a polynucleotide comprising a nucleotide sequence encoding a polypeptide comprising a porcine zona pellucida protein or an immunogenic fragment thereof.

28. The fertility impairing vaccine of claim 27 which is a polypeptide vaccine wherein the ratio (aZP:pZP) of avian zona pellucida protein (aZP) to porcine zona pellucida protein (pZP) is about 100:1 to about 1:100.